

STOCKPILE REPORT **to the Congress**

JULY - DECEMBER 1964

**EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF EMERGENCY PLANNING
WASHINGTON, D. C. 20504**

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WASHINGTON D.C. 20504

OFFICE OF THE DIRECTOR

April 23, 1965

Honorable Hubert H. Humphrey
President of the Senate

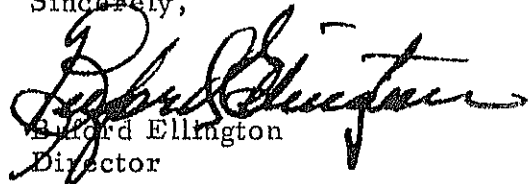
Honorable John W. McCormack
Speaker of the House of Representatives

Sirs:

Pursuant to Section 4 of the Strategic and Critical Materials Stock Piling Act, Public Law 520, 79th Congress, there is presented herewith the semi-annual report to the Congress on the strategic and critical materials stockpiling program for the period July 1 to December 31, 1964.

A statistical supplement to this report was transmitted to you on March 17, 1965.

Sincerely,



B. Ford Ellington
Director

Contents

Summary	Page vii
Introduction.....	1
Supply-Requirements Studies--Conventional War	1
Supply-Requirements Studies--Nuclear War and Reconstruction	1
Summary of Government Inventories of Strategic and Critical Materials	2
Status of Stockpile Objectives	3
Status of Stockpile Objectives, Strategic and Critical Materials on Hand in National Stockpile (Specification Grade), December 31, 1964.....	4
Other Materials in the National Stockpile.....	4
National Stockpile Inventories, Nonspecification Grades of Materials for Which There Are Stockpile Objectives.....	5
National Stockpile Inventories, Materials for Which There Are No Stockpile Objectives ..	5
National Stockpile Activities.....	6
Procurement and Upgrading	6
Disposal Program Activities.....	6
Disposal of Strategic Materials (Table)	9
Notes on Strategic and Critical Materials	10
Activities of the General Services Administration	12
Activities of the Department of Commerce.....	14
Activities of the Department of State.....	16
Activities of the Department of Agriculture.....	17
Activities of the Department of the Interior.....	19
Reports Issued by the Department of the Interior, Bureau of Mines.....	21
Reports Dealing with Stockpile Material Issued by U.S. Geological Survey	23
Status of Obligational Operations as of December 31, 1964.....	24
Total Obligations and Expenditures of Stockpiling Funds, Cumulative and by Fiscal Period Through December 31, 1964	25
Expenditures of Stockpile Funds, by Type, Cumulative and for First Half Fiscal Year 1965	26

Summary

This report covers the principal activities in stockpile planning and management during the period July 1 through December 31, 1964, under the provisions of Public Law 520 (79th Congress), the Strategic and Critical Materials Stock Piling Act.

Continued progress was made in developing supply-requirements estimates for resources that would be needed following a nuclear attack on the United States to insure maintenance of a viable economy and to carry out reconstruction programs. The results of these studies will be used in developing nuclear war stockpile objectives.

New supply and requirements data were developed for opium, which is used in manufacturing morphine and other medicinal derivatives. The new study takes into account a larger population base in addition to certain changes in medicinal requirement assumptions. The revised study includes an analysis of the probable vulnerability of opium and morphine processing facilities to destruction as a result of a possible massive nuclear weapon attack on the United States.

Strategic materials held in all Government inventories on December 31, 1964 amounted to \$8.4 billion at acquisition cost and approximately \$8.0 billion at estimated market value. Of this amount, the National Stockpile inventory of specification grade materials for which there are stockpile objectives totaled \$5.4 billion at cost and about \$5.7 billion at estimated market price. Comparison of the inventory with the stockpile objectives is shown in Chart 1. The total market value of specification grade materials in all Government inventories was approximately \$7.8 billion.

No new barter contracts for strategic materials were negotiated during this reporting period.

Cumulative sales commitments by the General Services Administration for the disposal of surplus materials as of December 31, 1964 totaled \$924.6 million. Disposals of strategic materials during July-December 1964 amounted to \$201.0 million, of which disposals from the National Stockpile accounted for \$146.3 million and disposals from the DPA inventory totaled \$54.7 million. The \$201.0 million set a new record for disposal sales and reflects a rate of disposal for FY 1965 considerably exceeding that believed possible earlier in the year.

Introduction

During July-December 1964, the Office of Emergency Planning continued its studies to determine stockpile needs to meet the requirements of general nuclear war and reconstruction. Stockpile objectives for nuclear war and reconstruction have not been developed previously. It will be some time before the new studies will provide an adequate basis for developing stockpile objectives to meet these needs.

SUPPLY-REQUIREMENTS STUDIES-- CONVENTIONAL WAR

Ocean Transportation.—OEP directed the development by responsible departments of a set of relative priorities for various materials that would require movement by maritime means during a conventional war period. After coordination with other departments and agencies, these will be used by the Office of Emergency Transportation, Department of Commerce, in analyzing the availability or shortage of maritime capabilities in a conventional war and also in the development of peacetime maritime programs.

Cordage Fibers.—Assembly of new basic data for abaca and sisal based on revised military re-

quirements data and further study of the progress being made in developing a synthetic (polypropylene) baler twine were initiated.

SUPPLY-REQUIREMENTS STUDIES-- NUCLEAR WAR AND RECONSTRUCTION

All departments and agencies conducting analyses of the potential supply of and requirements for resources following a nuclear attack on the United States continued their efforts. The results will be used in the OEP Supply-Requirements Study for Nuclear War and Reconstruction. Upon completion, this study will, among other things, provide the basis for the subsequent calculation of data needed to prepare nuclear war stockpile objectives.

The official input-output tables developed and published in November 1964 by the Office of Business Economics, Department of Commerce, and data related thereto, are being used to improve the techniques and information being used in the Supply-Requirements Study for Nuclear War and Reconstruction. The work on this study is also serving to clarify and define the roles of Federal departments and agencies in a postattack situation.

Summary of Government Inventories of Strategic and Critical Materials

On December 31, 1964, the strategic materials held in all Government inventories amounted to \$8.4 billion at acquisition cost and \$8.0 billion at estimated market value. Of this total, \$5.6 billion at cost was in the National Stockpile, \$1.4 billion in the Defense Production Act inventory, \$1.4 billion in the Supplemental Stockpile, and \$10 million in the Commodity Credit Corporation inventory. Of the total materials in Government inventories, \$5.0 billion at cost and \$4.4 billion at estimated market value are considered to be in excess of the conventional war stockpile objectives. Over 81 percent of the market value of the total excess is made up of 13 materials--aluminum, metallurgical grade

chromite, cobalt, copper, industrial diamond stones, lead, metallurgical grade manganese, nickel, quartz crystals, rubber, tin, tungsten, and zinc.

The following table is a summary of the values of all materials carried in each of the Government inventories, including those with quantities in excess of stockpile objectives for conventional war. It indicates the acquisition cost and estimated market value of the materials (1) having stockpile objectives and meeting stockpile specifications, (2) having stockpile objectives but not meeting stockpile specifications, and (3) not having stockpile objectives.

Summary of Government Inventories of Strategic and Critical Materials, December 31, 1964

(Stockpile objective: Market value, \$3,627,825,300)

	Total inventory		Excess to stockpile objectives	
	Acquisition cost	Market value ¹	Acquisition cost	Market value ¹
A. Inventories having stockpile objectives:				
(1) Meeting stockpile specifications:				
National Stockpile.....	\$5,435,673,000	\$5,697,683,000	\$2,632,297,300	\$2,009,826,800
Supplemental Stockpile.....	1,345,908,900	1,258,418,300	872,868,200	819,611,300
Defense Production Act.....	1,144,300,100	798,617,200	1,041,248,000	765,784,300
Commodity Credit Corporation.....	8,608,000	9,258,000	8,343,000	8,908,700
Total.....	7,934,490,000	7,763,976,500	4,554,756,500	4,204,131,100
(2) Not meeting stockpile specifications:				
National Stockpile.....	101,743,200	59,373,200	101,743,200	59,373,200
Supplemental Stockpile.....	9,140,400	2,649,900	9,140,400	2,649,900
Defense Production Act.....	275,936,700	106,371,500	275,936,700	106,371,500
Commodity Credit Corporation.....	770,300	211,300	770,300	211,300
Total.....	387,590,600	168,605,900	387,590,600	168,605,900
B. Inventories not having stockpile objectives:				
National Stockpile.....	20,905,200	16,687,800	20,905,200	16,687,800
Supplemental Stockpile.....	28,615,400	27,464,900	28,615,400	27,464,900
Defense Production Act.....	6,182,100	4,222,200	6,182,100	4,222,200
Commodity Credit Corporation.....	813,600	816,000	813,600	816,000
Total.....	56,516,300	49,190,900	56,516,300	49,190,900
C. Summary:				
National Stockpile.....	5,558,321,400	5,773,744,000	2,754,945,700	2,685,887,800
Supplemental Stockpile.....	1,383,664,700	1,288,533,100	910,624,000	849,726,100
Defense Production Act.....	1,426,418,900	909,210,900	1,323,366,800	876,378,000
Commodity Credit Corporation.....	10,191,900	10,285,300	9,926,900	9,936,000
Total inventory.....	8,378,596,900	7,981,773,300	4,998,863,400	4,421,927,900

¹Market values are computed from prices at which similar materials are being traded currently; or, in the absence of current trading, an estimate of the price which would prevail in commercial markets. The values are generally unadjusted for normal premiums and discounts relating to contained qualities so that market values are understated for materials such as metal grade bauxite to the extent that the inventories are of premium quality. The value does not necessarily reflect the amount that would be realized at time of sale.

Source: General Services Administration.

STATUS OF STOCKPILE OBJECTIVES

As of December 31, 1964, materials of stockpile grade held in the National Stockpile approximately equaled or exceeded the objective for 45 of the 76 materials on the List of Strategic and Critical Materials for Stockpiling. The inclusion of other Government inventories would increase the objectives approximately equaled or exceeded to 61.

The chart below shows the estimated market value for the objectives established and the extent

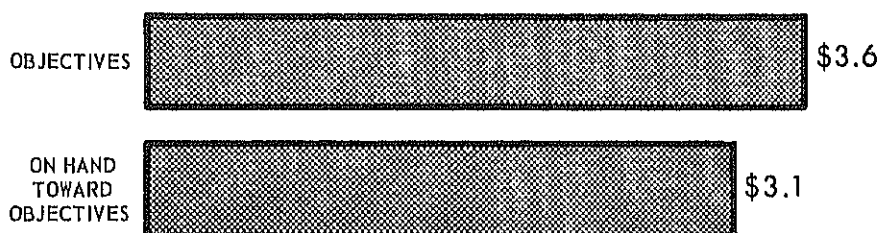
to which materials on hand and on order for the National Stockpile meet these objectives. The figures do not include other Government inventories (Supplemental Stockpile, DPA materials, or CCC stocks) or the quantities of materials in the stockpile having stockpile objectives and meeting stockpile specifications which are in excess of objectives (\$2.6 billion), materials in the stockpile for which there are no stockpile objectives (\$17.0 million), and materials in the stockpile not meeting stockpile specifications (\$59.0 million).

CHART 1

STATUS OF STOCKPILE OBJECTIVES

AS OF DECEMBER 31, 1964

(In Billions of Dollars)
MARKET VALUE



The list of strategic and critical materials for stockpiling is shown in the following table. Achievement of stockpile objectives for conventional war is shown in the table only if the materials are actually on hand in the National Stockpile. Footnotes indicate when sufficient quantities of materials are on hand in total Government inventories to complete the stockpile objectives. Also footnoted are those materials for which upgrading subobjectives in effect as of December 31, 1964, had not been achieved.

Stockpile objectives for nuclear war have not been developed as yet. It is now estimated that the studies currently under way will not provide an adequate basis for developing stockpile objectives to meet the needs of nuclear war and reconstruction before the end of FY 1965. Upon completion of these studies, a period of at least six months will be required to develop stockpile objectives. It is anticipated that some of the objectives for nuclear war may be higher and others may be lower than the objectives established for conventional war.

Status of Stockpile Objectives, Strategic and Critical Materials on Hand in National Stockpile (Specification Grade)

December 31, 1964

Materials	Inventory equals or exceeds objective
Aluminum.....	x
Aluminum oxide, fused, crude.....	x
Antimony.....	x
Asbestos, amosite.....	(1)
Asbestos, chrysotile.....	--
Bauxite, metal grade, Jamaica type.....	(1)
Bauxite, metal grade, Surinam type.....	(1)
Bauxite, refractory grade.....	x
Beryl.....	(1)
Bismuth.....	(1)
Cadmium.....	x
Castor oil.....	x
Celestite.....	(1)
Chromite, chemical grade.....	(1)
Chromite, metallurgical grade.....	x
Chromite, refractory grade.....	--
Cobalt.....	x
Columbium.....	(2) x
Copper.....	(2) x
Cordage fibers, abaca.....	x
Cordage fibers, sisal.....	x
Corundum.....	--
Diamond dies, small.....	--
Diamond, industrial: Crushing bort.....	x
Diamond, industrial: Stones.....	(1)
Feathers and Down, waterfowl.....	x
Fluorspar, acid grade.....	(1)
Fluorspar, metallurgical grade.....	--
Graphite, natural--Ceylon, amorphous lump.....	(1)
Graphite, natural--Malagasy, crystalline	x
Graphite, natural--Other than Ceylon and Malagasy, crystalline.....	x
Iodine.....	--
Jewel Bearings.....	--
Kyanite-Mullite.....	x
Lead.....	x
Magnesium.....	x
Manganese, battery grade, natural ore....	x
Manganese, battery grade, synthetic dioxide.....	x
Manganese, chemical grade, type A ore....	(1)
Manganese, chemical grade, type B ore....	(1)
Manganese, metallurgical grade.....	(1) (2)
Mercury.....	(1)
Mica, muscovite block, stained and better qualities.....	x
Mica, muscovite film, first and second qualities.....	--
Mica, muscovite splittings.....	x
Mica, phlogopite block.....	x
Mica, phlogopite splittings.....	x
Molybdenum.....	(2) x
Nickel.....	x
Opium.....	(2) x
Platinum group metals, iridium.....	--
Platinum group metals, palladium.....	--
Platinum group metals, platinum.....	x
Pyrethrum.....	x
Quartz crystals.....	x
Quinidine.....	--

Materials	Inventory equals or exceeds objective
Quinine.....	x
Rare earths.....	x
Rubber, crude, natural.....	x
Rutile.....	--
Sapphire and ruby.....	--
Selenium.....	--
Shellac.....	x
Silicon carbide, crude.....	x
Sperm oil.....	x
Talc, steatite, block and lump.....	x
Tantalum.....	--
Thorium.....	(1)
Tin.....	x
Titanium.....	(1)
Tungsten.....	(2) x
Vanadium.....	(2) x
Vegetable tannin extract, chestnut.....	x
Vegetable tannin extract, quebracho.....	x
Vegetable tannin extract, wattle.....	x
Zinc.....	x

xInventory equals or exceeds objective.

--Inventory deficit.

¹Sufficient quantities are on hand in total Government-owned inventories to complete the objectives.

²Although total quantities of basic and up-graded forms are equal to the overall objective, the upgrading of the basic material to more readily usable forms for prompt emergency use has not been completed.

OTHER MATERIALS IN THE NATIONAL STOCKPILE

In addition to inventories of specification grade materials, the National Stockpile contains nonspecification grades of materials for which there are stockpile objectives, materials that have been removed from the stockpile list, and others for which there are no objectives. As of December 31, 1964, quantities on hand of nonspecification grades of materials and materials with no stockpile objectives are indicated in the following tables.

Most of the nonspecification grade materials were acquired by transfer of Government-owned surpluses to the stockpile after World War II. Others were accepted as contract termination inventories. Several were of specification grade when acquired but no longer qualify due to changes in industry practices and other technological advances. Disposal action for many of these items has been authorized by OEP. Others are in the development stage or under disposal consideration. Inventory changes during the report period were due primarily to disposals, or to reclassification and other adjustments of the inventories.

*National Stockpile Inventories, Nonspecification
Grades of Materials for Which There are Stock-
pile Objectives**

As of December 31, 1964

Material	Unit	Quantity
Aluminum.....	ST	1,787
Bismuth.....	Lb.	36,580
Celestite.....	SDT	28,816
Chromite, metallurgical grade...	SDT	59,454
Columbium.....	Lb.	1,335,553
Diamond dies.....	Pc.	8,371
Fluorspar, acid grade.....	SDT	4,960
Graphite, other than Ceylon and Malagasy, crystalline.....	ST	672
Jewel bearings.....	Pc.	14,715,973
Manganese, metallurgical grade..	SDT	631,692
Mica, muscovite block, stained A/B and better.....	Lb.	343,923
Mica, muscovite film, 1st and 2d quality.....	Lb.	23,674
Mica, phlogopite block.....	Lb.	205,638
Opium, alkaloid and salts.....	Lb.	2,166
Platinum group metals, platinum	Tr.Oz.	33
Quartz crystals.....	Lb.	663,843
Talc, steatite, block and lump...	ST	20
Tantalum.....	Lb.	1,515,449
Tungsten.....	Lb.	16,227,406

*Quantities may be shown on this table and also on the disposal table when sales commitments have been made, but the material has not moved out of inventory.

Source: General Services Administration.

*National Stockpile Inventories, Materials for
Which There are No Stockpile Objectives**

As of December 31, 1964

Material	Unit	Quantity
Asbestos, crocidolite, soft....	ST	1,567
Coconut oil.....	Lb.	6,694,027
Diamond dies, other than small	Pc.	355
Diamond tools.....	Pc.	64,178
Hyoscine.....	Oz.	2,100
Mica, muscovite block, stained B and lower.....	Lb.	4,540,632
Mica, muscovite film, 3d quality.....	Lb.	500,121
Palm oil.....	Lb.	10,290,233
Platinum group metals, rhodium	Tr.Oz.	618
Silk noils.....	Lb.	969,479
Silk, raw.....	Lb.	113,515
Silk waste.....	Lb.	10,445
Talc, steatite, ground.....	ST	3,901
Zirconium ore, baddeleyite....	SDT	16,533
Zirconium ore, zircon.....	SDT	1,920

*Quantities may be shown on this table and also on the disposal table when sales commitments have been made, but the material has not moved out of inventory.

Source: General Services Administration.

National Stockpile Activities

PROCUREMENT AND UPGRADING

The OEP Strategic Stockpile Procurement Directive for FY 1965 provides for the cash purchase of only one material, jewel bearings. In addition, the Directive provides for the stockpile acquisition through barter of 10 materials--refractory grade chromite, oxygen free copper, corundum, iodine, low carbon ferromanganese, medium carbon ferromanganese, silicomanganese, palladium, quinidine, and selenium. The Directive also provides for the upgrading of certain materials in the stockpile to columbium metal, ferrocolumbium, ferromolybdenum, morphine sulphate, capacitor grade tantalum, ferrotungsten, crystalline tungsten carbide, hydrogen reduced tungsten powder, and ferrovanadium. About 350,000 tons of material will be acquired under upgrading and barter transactions. Surplus materials approved for disposal will be used to meet upgrading and related transportation costs.

During July-December 1964, no new barter contracts for strategic materials were negotiated. By comparison, 10 contracts for four strategic materials valued at \$15 million were negotiated in the January-June 1964 period and 27 contracts valued at \$66.1 million were negotiated in the July-December 1963 period.

The General Services Administration arranged for the extension of the stockpile contract with the Bulova Watch Company covering the production of jewel bearings at the Government-owned Turtle Mountain Plant in Rolla, North Dakota, through December 31, 1964. GSA discussed with the contractor the terms and conditions to be included in a new contract designed to replace the present contract and lease.

Based on an inspection of manufacturing equipment being used in jewel bearing production facilities located in Switzerland, a technical review group, consisting of two representatives from GSA and a consultant from the Department of Defense, determined the types of equipment which will be required to modernize the Government-owned Turtle Mountain Plant in Rolla, North Dakota. Contracts for the selected equipment will be placed by the General Services Administration. Design work for the new building at the plant was completed, and construction contract bids were to be submitted by February 4, 1965, with construction anticipated to get under way soon thereafter.

Deliveries of columbium and tantalum metals continued to be made under a contract for upgrading columbium and tantalum bearing materials in the stockpile, which was executed by GSA late in

fiscal year 1963. Approximately 44,900 pounds of tantalum metal and 7,200 pounds of columbium metal were tendered for return to the stockpile during July-December 1964. Payment under this contract is being made with surplus tungsten concentrates and ferronickel authorized for disposal from the Defense Production Act inventory.

A total of 3,622 short tons of oxygen-free, high conductivity copper was delivered under an upgrading contract executed by GSA in late FY 1964. Payment for conversion and all transportation costs under the contract are being made with copper from the Defense Production Act inventory.

DISPOSAL PROGRAM ACTIVITIES

During the period July through December 31, 1964, further progress was made with respect to the long-range disposal programming of excess stockpile materials. This activity is under the guidance of the Interdepartmental Disposal Committee established by the Director of OEP in 1963 in accordance with the recommendations set forth in the Executive Stockpile Committee's Report, as approved by the President on January 30, 1963. The Committee, chaired by OEP, consists of representatives from the Departments of State, Defense, the Interior, Agriculture, Commerce, and Labor, the General Services Administration, Small Business Administration, and the Agency for International Development. The Atomic Energy Commission, the Bureau of the Budget, and the Treasury Department participate as observers. The work of the Committee is supplemented by a Subcommittee, chaired by GSA, whose responsibility it is to determine the scope of the program and recommend guidelines as to the quantity and rate of sales, including other pertinent factors which must be reviewed to insure that the interests of producers, processors, and consumers, and the possible effects on interested foreign governments, are thoroughly considered in the development of each disposal plan. While the plan is in the development stage, appropriate consultations are held with industry and other interested parties, including foreign governments, to provide ample opportunity for the exchange of views and to obtain the benefit of their advice.

In addition, ad hoc working groups consisting of agency specialists are appointed on a commodity-by-commodity basis. These groups develop the necessary technical, economic, and statistical data required by the Subcommittee in reaching long-range disposal determinations. During the reporting period, working groups completed studies

relating to 11 materials. The Subcommittee held a total of 19 meetings in completing its studies and reaching long-range disposal determinations with respect to 16 materials, 14 of which were favorably acted upon by the full Committee and forwarded to the Director of OEP with recommendations for action. The remaining two are subject to further consideration by the full Committee.

During the period, the Director of OEP tentatively approved 20 plans, consisting of 14 submitted during the six-month period plus 6 submitted earlier, with instructions to GSA to develop a tentative plan as a basis for consultations with responsible agencies and other interested parties. At the end of the period, 12 of these plans were undergoing consultation with industry and foreign governments, 4 were deferred temporarily subsequent to consultations, and 4 were authorized for submission to the Congress for approval.

To help meet several acute supply situations which had developed, the Congress authorized emergency releases for domestic consumption of 5,000 short tons of antimony, 50,000 short tons of lead, and 75,000 short tons of zinc. To relieve hardship cases, the President approved the release of 20,000 short tons of copper for industry from the DPA inventory.

During July-December 1964, OEP granted final approval for a total of 17 disposal actions, of which 10 involve releases from the National and Supplemental Stockpiles, 6 from the DPA inventory, and 1 from both the National Stockpile and DPA inventory.

A summary of these disposal actions follows:

July 28—Zinc (75,000 short tons). The disposal plan was developed and concurred in by the interested agencies in order to implement Public Law 88-374, enacted July 14, 1964, for the disposal of 75,000 short tons of zinc from the National Stockpile to help alleviate the tight market situation without regard to the six-month waiting period.

August 3—Raw Silk (113,500 pounds) and

August 3—Silk Noils (969,500 pounds). These materials were removed from the stockpile list on March 5, 1964. Plans for the disposal of the entire inventories of raw silk and silk noils were concurred in by the interested agencies and Congressional approval of this disposal has been requested.

August 24—Hyoscine (2,100 ounces). Hyoscine was removed from the stockpile list on March 19, 1964. The release of 2,100 ounces of hyoscine from the National Stockpile was authorized by the Director, subject to Congressional approval.

September 14—Abaca (47,000,000 pounds). The quantity covers the excess abaca in the National Stockpile. The long-range plan has been concurred in by all interested agencies. Request for approval without the usual six-month waiting period is being submitted to Congress.

September 15—Copper (10,000 short tons). 10,000 short tons of copper were authorized to be released from the Defense Production Act inventory for

direct Government use, principally the Bureau of the Mint, pursuant to DMO 8600.1.

October 2—Titanium Sponge, Sodium Reduced (1,500 pounds). The release of 1,500 pounds of low Brinell sodium-reduced titanium sponge was authorized for release from the Defense Production Act inventory to the Navy for research purposes.

October 6—Nickel (340,000,000 pounds). Authorization was granted for the release of approximately 340 million pounds of excess nickel consisting of approximately 235 million pounds in the National Stockpile and 105 million pounds in the Defense Production Act inventory over a period of about 12 years. This is to be accomplished in two phases. The initial quarterly offering on the basis of 15 million pounds annually resulted in the sale of 2.7 million pounds under Part I from the Defense Production Act inventory. Subject to Congressional approval, offerings will be made later under Part II from the National Stockpile.

October 22—Copper (30,000 short tons). An additional 30,000 short tons of copper were authorized to be released from the Defense Production Act inventory to cover the annual requirements of the Mint. The release of this copper was of direct assistance to the Mint in carrying out its programs and also eliminated the need for the Mint to look to the open market, already in critically short supply, for its needs.

October 28—Antimony (26,164 short tons). The quantity covers the excess antimony in the National and Supplemental Stockpiles and includes 5,000 short tons authorized for release by the Congress under Public Law 88-615, enacted October 2, 1964, to provide an emergency supply to help alleviate the current market shortage. Disposal of the remaining 21,164 short tons will require the express approval of the Congress.

October 28—Nickel (10,000,000 pounds). An additional 10 million pounds of nickel were authorized to be released from the Defense Production Act inventory to cover the annual requirements of the Mint. At the same time, the uncommitted balance of a 1962 authorization for 10 million pounds for foreign aid requirements was cancelled since practically no releases had been made under this authorization during the previous two years.

November 6—Diamond Dies, Small (8,374 pieces). Authorization was granted for the release of 8,374 pieces of subspecification grade small diamond dies determined to be excess to defense requirements, from the National Stockpile, subject to Congressional approval.

November 27—Bismuth Alloys (36,580 pounds). Authorization was granted for the release of approximately 36,580 pounds of nonstockpile grade bismuth alloys, excess to stockpile needs, from the National Stockpile, subject to Congressional approval.

November 27—Magnesium (21,500 short tons). The quantity represents the remaining excess magnesium, all in the National Stockpile, not pre-

viously authorized. A long-range disposal plan has been approved by the interested agencies. Congress will be asked to approve the disposal.

December 9—Rubber, Crude, Natural (620,000 long tons). On the basis of the revised stockpile objective, authorization was granted for the release of an additional 620,000 long tons of surplus natural rubber from the National Stockpile, subject to Congressional approval. This quantity represents the remaining excess of rubber in the stockpile and is in addition to the remaining 102,463 long tons of rubber to be disposed of under a prior Congressional authorization. A revised long-range disposal plan, designed to increase sales, was approved by the interested agencies and placed in operation on September 1, 1964. The plan established separate procedures applicable to commercial sales and sales for direct and indirect Government use and contemplated disposal of the additional 620,000 long tons over a six to seven year period.

December 11—Beryl Ore Crystal (926 pounds). OEP authorized the sale, by transfer from the Defense Production Act inventory to the Smithsonian Institution, of a special beryl ore crystal weighing approximately 926 pounds.

December 16—Copper (20,000 short tons). Authorization was granted for the release of 20,000 short tons of copper, in accordance with the President's approval that this quantity be released from the Defense Production Act inventory to meet the needs of consumers to avoid hardship and to assist defense production.

LEGISLATION RELATIVE TO STOCKPILE DISPOSALS

During the period, the Congress enacted legislation authorizing the following disposals from the National Stockpile:

Specification Grade:

<u>Material</u>	<u>Unit</u>	<u>Quantity</u>	<u>Date Enacted</u>
Tin.....	LT	98,000	H.Con.Res. 300--7- 2-64
Zinc.....	ST	78,000	P.L. 88-374 --7-14-64
Lead.....	ST	50,000	P.L. 88-373 --7-14-64
Molybdenum.....	Lb.	11,000,000	P.L. 88-377 --7-14-64
Sisal.....	Lb.	9,500,000	P.L. 88-617 --10-2-64
Antimony.....	ST	6,000	P.L. 88-615 --10-2-64

Nonspecification Grade or Nonobjective Items:

<u>Material</u>	<u>Unit</u>	<u>Quantity</u>	<u>Date Enacted</u>
Cupro-nickel ingots.....	ST	366	H.Con.Res. 320--9-24-64
Nickel (misc. fabricated forms)...	Lb.	66,834	H.Con.Res. 320--9-24-64
Punch mica.....	Lb.	220,230	H.Con.Res. 320--9-24-64
Tantalum.....	Lb.	25,740	H.Con.Res. 320--9-24-64
Zinc (engraving plates).....	Lb.	221,087	H.Con.Res. 320--9-24-64
Copper and copper base alloy (scrap and strip form).....	ST	165	H.Con.Res. 320--9-24-64
Lead castings.....	Lb.	46,800	H.Con.Res. 320--9-24-64
Soft crocidolite asbestos.....	ST	1,567	H.Con.Res. 320--9-24-64
Low grade manganese ore.....	ST	250	H.Con.Res. 320--9-24-64
Industrial diamond dies.....	Pcs.	355	H.Con.Res. 320--9-24-64

As of December 31, 1964, cumulative sales commitments of surplus materials negotiated by GSA totaled \$924.6 million at sales value, of which \$549.5 million were from the National Stockpile, \$364.5 million from the Defense Production Act inventory, and \$10.6 million from the Federal Facilities Corporation (tin). During the July-December 1964 period, GSA entered into disposal contracts with a total sales value of approximately \$201 million. This set a new record for disposal sales and exceeded the total for any full fiscal year in the past, the record year having been fiscal year 1964 with sales of \$167.1 million. This reflects a rate of disposal for FY 1965 consid-

erably exceeding that estimated earlier in the six-month period. Of the six-month total of \$201 million, disposals from the National Stockpile accounted for \$146.3 million, and disposals from the Defense Production Act inventory totaled \$54.7 million. During July-December 1964, sales to industry equaled approximately \$144 million, and direct Government use totaled \$57 million. GSA executed approximately 2,000 sales contracts covering these disposal sales. The total sales commitments of \$201 million were approximately \$7.6 million in excess of the acquisition cost of \$193.4 million due primarily to the higher resale prices prevailing for copper, molybdenum, and tin.

Major disposals during July-December 1964 were: tin, \$61.5 million; copper, \$29.8 million; rubber, \$28.5 million; zinc, \$21.1 million; molyb-

denum, \$13.9 million; lead, \$13.1 million; nickel, \$12.7 million; and aluminum, \$10.4 million.

A list of the materials sold is shown on the following table.

Disposal of Strategic Materials

July-December 1964

Material	Unit	Sales commitments	
		Quantity	Sales value
NATIONAL STOCKPILE INVENTORY:			
Antimony.....	ST	1,135	\$950,018
Cadmium.....	Lb.	23,600	70,905
Castor oil.....	Lb.	6,534,380	901,642
Chromite, metallurgical.....	SDT	2,338	23,380
Cordage fibers, sisal.....	Lb.	714,478	78,614
Feathers and down.....	Lb.	1,153,819	3,529,270
Lead.....	ST	50,000	13,125,320
Magnesium ingots.....	ST	2,250	1,425,637
Molybdenum.....	Lb.	8,048,229	13,937,755
Nickel oxide powder.....	Lb.	342,000	253,705
Palm oil.....	Lb.	5,488,664	421,813
Quartz crystals, crude.....	Lb.	87,544	141,075
Rubber.....	LT	54,606	28,511,206
Shellac.....	Lb.	441,652	84,591
Tin.....	LT	16,241	61,546,996
Tungsten concentrates.....	Lb.	59	10
Vegetable tannin extract:			
Chestnut.....	LT	1,551	276,514
Zinc.....	ST	75,000	21,089,118
Total National Stockpile.....	146,377,568
DEFENSE PRODUCTION ACT INVENTORY:			
Aluminum.....	ST	21,500	10,418,367
Beryl.....	Lb.	926	150
Copper.....	ST	44,735	29,831,044
Cryolite, synthetic.....	ST	11,561	1,875,600
Nickel.....	Lb.	15,915,000	12,484,417
Titanium sponge.....	Lb.	233,173	50,475
Total DPA.....	54,660,053
Grand total.....	\$201,037,621

Source: General Services Administration.

Notes on Strategic and Critical Materials

July-December 1964 Activity

ALUMINUM

Of the 135,000 short tons of aluminum authorized for disposal from the DPA inventory, 21,500 short tons were sold at a dollar value of \$10.4 million. Total sales to date amount to 100,199 short tons, with proceeds of \$46.5 million. This leaves approximately 34,801 short tons of the original 135,000 short tons remaining to be sold at the final offering in March 1965. Of the total remaining, 25,000 tons represent the total amount of set-asides restricted for small firms in the four previous offerings, none of which was sold.

ANTIMONY

Sales of 1,135 short tons of antimony from the National Stockpile for \$950,018 were made as authorized by Public Law 88-615.

BERYL

One large crystal specimen of beryl ore, equivalent to 926 pounds of specification grade ore, was transferred to the Smithsonian Institution from the DPA inventory.

CADMIUM

A sales announcement was issued June 18, 1964, on the disposal of 5 million pounds of cadmium from the National and Supplemental Stockpiles, authorized under Public Law 88-319. Sales for the six-month period amounted to 23,600 pounds at a value of \$70,905.

CASTOR OIL

A total of 6,534,380 pounds of castor oil was sold for a total sales value of \$901,642. This brings the cumulative total sold since the first sale on August 15, 1962, to 48,646,700 pounds. Total cumulative sales value is \$6,872,668.

CHROME ORE

Approximately 2,338 short tons of nonspecification metallurgical chrome ore, valued at \$23,380, were sold from the National Stockpile.

COPPER

Sales commitments made with the Bureau of the Mint for direct Government use amounted to 44,735 short tons, with a value of \$29.8 million.

CORDAGE FIBERS

A total of 714,478 pounds of surplus sisal fiber from the National Stockpile was sold for \$78,614, under the authorization of Public Law 88-617, which approved disposal for a total of 9.5 million pounds. A plan for the disposal of approximately 47 million pounds of surplus abaca from the National Stockpile has been prepared for submission to the Congress. There was no rotation of cordage fibers.

CRYOLITE, SYNTHETIC

Sale of 11,551 short tons of synthetic cryolite from the DPA inventory was made for \$1,875,600. This sale completely exhausts all cryolite from the Government stockpile.

FEATHERS AND DOWN

Transfers to the Department of Defense for use in military sleeping bags amounted to 1,074,044 pounds of feathers and down, with a value of approximately \$3.2 million. At public auction, 79,775 pounds of down were sold for \$287,495.

LEAD

On July 14, 1964, Public Law 88-373 was enacted authorizing the release of 50,000 short tons of excess lead from the National Stockpile to help relieve the supply-demand situation. The total quantity was sold on a shelf-item basis to domestic primary producers, representative of foreign primary producers, and secondary refiners of soft lead and domestic consumers of primary lead qualifying as small business concerns, at a total value of \$13.1 million. On January 6, 1965, H.R. 1658 was introduced in the House of Representatives to authorize the disposal of another 150,000 short tons for disposal without regard to the six-month waiting period. OEP has recommended that the amount be increased to 200,000 short tons to provide an additional amount for direct use by Government facilities.

MAGNESIUM

Of the 12,500 short tons of magnesium metal authorized for disposal from the National Stockpile, 2,250 short tons were sold with proceeds of approximately \$1.4 million.

MOLYBDENUM

Sales from the National Stockpile of 8,048,229 pounds of molybdenum contained in concentrates were made to 65 successful bidders under two offerings for approximately \$13.9 million. The approximately 3 million pound balance of the 11 million pounds of molybdenum authorized for disposal was offered for sale by sealed bids during January 1965.

NICKEL

Total sales of nickel from the DPA inventory amounted to 15,915,000 pounds, of which 13,215,000 pounds were sold to the Bureau of the Mint for direct Government use. Included in the total quantity of DPA nickel sold were 2,200,000 pounds of nickel cathodes and 500,000 pounds of nickel contained in ferronickel. The sales value of the entire amount totaled approximately \$12.5 million.

In addition, 342,000 pounds of nickel plus cobalt contained in nickel oxide powder from the SCM inventory were sold, with a sales value of \$253,705.

PALM OIL

A total of 5,488,664 pounds of palm oil was sold for a total sales value of \$421,813. Total cumulative sales amount to 27,762,105 pounds and the total cumulative sales value to \$2,077,638.

QUARTZ CRYSTALS

A total of 87,544 pounds of quartz crystals was sold from the National Stockpile for \$141,075.

RUBBER

Total sales of rubber from the National Stockpile amounted to 54,606 long tons, having a value of \$28.5 million, bringing total cumulative sales to date to 367,537 long tons, valued at about \$235.2 million, since the inception of the program in October 1959. This leaves a balance of 102,463 long tons of rubber remaining to be sold of the original 470,000 long tons authorized for disposal by the Congress. Congressional authority is being requested to dispose of an additional 620,000 long tons of rubber representing the remaining surplus in the stockpile.

Efforts are being continued to expand the use of rubber by AID and DOD in their foreign aid programs. Of the total cumulative sales since disposal commenced, approximately 55,151 long tons have been used in Government programs. The utilization of rubber in direct and indirect Government programs during the reporting period accounted for 20,606 long tons, with a value of approximately \$9.4 million.

SHELLAC

Sales of 441,652 pounds of shellac were made from the National Stockpile for a total sales value

of \$84,591. Total cumulative sales amount to 1,869,436 pounds for a gross total of \$320,529.

SILK

Plans for the disposal of the entire inventories of raw silk and silk noils were submitted to the Congress in October 1964 inasmuch as these materials have been removed from the stockpile list.

TIN

In June 1962, the Congress authorized the disposal of 50,000 long tons of tin from the National Stockpile. Sales from September 12, 1962 through December 31, 1964, have totaled 43,173 long tons, valued at \$138.2 million, of which 16,241 tons, valued at \$61.5 million, were sold during July-December 1964. Of this amount, 15,170 long tons were sales to industry, 1,057 tons were sold in connection with AID programs and the remaining 14 tons were used by other Government agencies. On March 18, 1964, a long-range plan for disposal of all excess stockpile tin, totaling an additional 98,000 long tons besides the quantity remaining unsold under the previous authorization, was approved by OEP subject to Congressional authorization, which was granted on July 2, 1964.

TITANIUM SPONGE

Sales of titanium sponge from the Defense Production Act inventory amounted to 233,173 pounds, with a total sales value of \$50,475. Of this amount, sales of 1,500 pounds of titanium sponge were made to the U.S. Naval Research Laboratory, 673 pounds were sold to the Watertown Arsenal, and 30,000 pounds were sold for the production of sonar plates under Navy contract. The remaining 201,000 pounds consisted of titanium sponge which had been damaged by fire at the Sharonville Depot.

VEGETABLE TANNINS

Sales of 1,551 long tons of chestnut extract were made from the National Stockpile for \$276,514.

ZINC

Of the total 75,000 short tons of zinc sold from the National Stockpile, 7,500 short tons were sold to independent alloyers of zinc base alloys, who qualified as small business, and 67,500 short tons were sold to domestic producers of primary slab zinc, both of whom agreed to distribute the metal at no profit, at a total sales value of \$21.1 million. On January 5, 1965, H.R. 1496 was introduced in the House of Representatives to authorize the disposal of another 150,000 short tons without regard to the six-month waiting period. OEP has recommended that the amount be increased to 200,000 short tons to provide an additional amount for direct use by Government facilities.

Activities of the General Services Administration Relating to Stockpiling of Strategic and Critical Materials

The General Services Administration is charged with the general operating responsibility, under policies set forth by OEP, for stockpile management, including (1) purchasing and making commitments to purchase, transfer, rotating, upgrading, and other processing of metals, minerals, and other materials; (2) expansion of productive capacity through supply contracts, including the installation of Government-owned equipment, such as machine tools, in privately-owned facilities; (3) storage and maintenance of all strategic materials held in Government inventories; and (4) disposal of excess stockpile materials including the development of disposal plans, selling the materials, and arranging for Government use of such materials.

GSA implemented disposals to meet industry needs for materials, as is indicated by the expeditious release of 75,000 tons of zinc, 40,000 tons of lead, and 5 million pounds of molybdenum. This heavy volume of releases was concentrated in a 3-week period, during which time almost 700 releases of these materials were issued, in addition to substantial releases of other materials. Because of the tight market situation, industry was anxious to obtain the releases and tight deadlines were met at various depots in as little as 24 hours.

The activities of the General Services Administration particularly in connection with procurement, upgrading, and disposals have been summarized in the earlier sections of this report.

STORAGE AND MAINTENANCE

On December 31, 1964, strategic and critical materials were stored at 155 locations as follows:

Military depots.....	48
GSA depots.....	25
Other Government-owned sites...	13
Leased commercial sites.....	15
Industrial plant sites.....	39
Commercial warehouses.....	15
Total.....	155

As of December 31, 1964, approximately 51.9 million tons of strategic materials were stored at the above facilities. Approximately 498,000 tons of materials were received into storage during the reporting period. This is a substantial increase from the preceding six months when only 98,000 tons were received, and is accounted for primarily

by heavy deliveries of bauxite acquired on the CCC Barter Program.

Shipments from storage depots of materials sold on disposal programs amounted to approximately 344,000 tons.

Evacuation of the warehouse at the GSA/DMS Buffalo Depot was practically completed during July-December 1964, when 4,039 tons of various materials were relocated to other GSA depots, and 4,911 tons of rubber, tannin, and tungsten were shipped out under the disposal sales program. The remaining 1,487 tons will be evacuated by the end of February 1965, at which time the warehousing activity at this depot will be inactivated, resulting in a reduction of \$236,000 in annual storage costs. In addition, this action has avoided the necessity for major roof rehabilitation at a cost of \$1,440,000.

On June 16, 1964, the Office of Emergency Planning approved the release of the Iona Island Depot, Iona Island, New York, from stockpile storage use. This facility, which has been used for a number of years as a stockpile depot for strategic and critical materials, is considered a high-cost facility because of the relatively small quantity of materials in storage and the high operating cost. A substantial portion of the crude rubber stored at the depot will be sold on the disposal sales program, and the balance of the materials will be relocated to other GSA depots. Upon evacuation of the facility, scheduled to be accomplished by March 31, 1965, annual storage costs will be reduced by approximately \$260,000. The New York State Park Commission has indicated an interest in the acquisition of this facility as an adjunct to the Bear Mountain State Park, a recreational area which has long been favored by residents of New York and New Jersey. During the reporting period, 28,020 tons of various materials were relocated from Iona Island to other depots, and 9,995 tons of rubber were shipped under the disposal sales program.

A total of 2,366 tons of cordage fiber and cryolite was shipped from commercial warehouses during the period under disposal and relocation programs, thus reducing annual storage charges by approximately \$9,000.

In accordance with an OEP directive to store a total of 44,800 short tons of crude rubber in the New England area in order to maintain a balance in that area proportionate to its consumption, contracts were negotiated with five commercial warehouses in Massachusetts to provide additional

storage services for the 18,200 tons of which the area is short. Shipments to the area were started during December when 428 tons were received into storage. Storage rates negotiated range from \$6.36 to \$6.60 per ton on an annual basis, as compared with the fiscal year 1964 average rate of \$8.21.

On November 1, GSA assumed management and custodial responsibility for the stockpile materials located at the Mira Loma Air Force Station, Mira Loma, California. This facility is being inactivated by the Department of Defense.

Other military depots inactivated by DOD and transferred to GSA, at which only stockpiles of bulk ores are located, include Army facilities at

Theodore, Alabama; Rossford, Ohio; and Houston, Texas.

Arrangements were made with the Atomic Energy Commission to provide a storage area for radioactive rare earth and thorium residues at its Weldon Spring, Missouri, facility. These residues will be transferred from the present storage site in Granite City, Illinois.

Following completion of the diamond amalgamation program, all diamonds accumulated at a bank in New York City were dispersed to permanent stockpile locations in December.

A total of 72 new preservation and maintenance projects was authorized during the period, and 97 previously authorized projects were completed.

Activities of the Department of Commerce Relating to Stockpiling of Strategic and Critical Materials

The Department of Commerce has been delegated a number of responsibilities with regard to the National Stockpile and these, in turn, have been assigned to the Business and Defense Services Administration (BDSA) within the Department. BDSA prepares for the Office of Emergency Planning estimates of essential civilian and war-supporting requirements for strategic materials in a mobilization period, a basic element in determining stockpile objectives. In certain limited cases it also prepares estimates of the mobilization supply of such materials. It also reviews plans for disposal of surplus stockpile materials and it provides OEP or GSA with its evaluation of the market impact of proposed schedules of sales. In addition, it develops recommendations in the matter of purchase specifications and storage procedures and keeps under surveillance technological developments which might result in changes in requirements. Additionally, it prepares special studies for OEP regarding strategic material problems and submits to OEP, on behalf of the Department, recommendations or advice on a variety of stockpile policies and programs.

ESTIMATES OF ESSENTIAL CIVILIAN AND WAR-SUPPORTING REQUIREMENTS

The principal procedure for estimating essential civilian and war-supporting requirements involves an analysis of each major end-use item containing significant quantities of the material to be stockpiled. Recent trends in usage are reviewed, prospective technological developments are taken into account, and the essentiality of the item or of the use of the material in the item during mobilization is determined. Finally, the extent to which wartime production of the item would parallel previously determined wartime production levels of the category of which it is a part is evaluated. These factors then become the basis for estimating mobilization requirements for the material for the given end-use item. Similar calculations are applied to other end-use items and the sum of these gives the total of essential requirements. The complexity of the work and the data is such that extensive work in specific areas and industry is required. In 1964, BDSA completed its estimates of mobilization requirements for all stockpile items.

As soon as guidelines and assumption for estimating requirements in the event of a nuclear weapon attack are available, a second review of all items in the stockpile will again be made. Meanwhile, estimates of conventional war requirements are being reviewed only in those cases where technological developments and changes in trends of usage indicate a significant modification of recent estimates or where there is evidence new items should be stockpiled. During the second half of 1964, estimates of requirements submitted to OEP covered only one item—silver.

PURCHASE SPECIFICATIONS AND SPECIAL INSTRUCTIONS

Materials stockpiled for war use must be in forms which permit efficient utilization and optimum storage. Purchase specifications are designed to assure these ends and in their preparation much weight is given to industrial guidance and experience. Industry specialists and Government experts are consulted and their views correlated when such specifications are developed or revised.

Specifications and special instructions prepared for OEP during this period involved the following materials:

Asbestos, amosite	Platinum
Beryllium metal	Rutile
Copper	Sperm oil
Diamond dies	Titanium sponge
Ferrochromium	Tungsten carbide, crystalline
Iridium	Tungsten carbide powder
Manganese ore, metallurgical grade	
Nickel	

DISPOSAL PROGRAMS

As a member of the Interdepartmental Disposal Committee, the Subcommittee, and the selected ad hoc working groups, BDSA has helped develop basic data and consider the various problems that must be satisfactorily resolved if undue effects upon various segments of the domestic economy and our international relations are to be avoided.

During the period, BDSA participated in the long-range disposal determinations with respect to 16 materials, 14 of which were acted upon by

the Interdepartmental Disposal Committee and submitted to OEP for action. Before decision is made regarding the adoption of a disposal plan, appropriate consultations are held with domestic consumers, distributors, and traders to obtain their views and the benefit of their advice for

consideration in the development of the final plan. During the period, 19 proposed plans were submitted to BDSA for industry consultations. BDSA has also assisted GSA in the development of improved methods of sales for major programs under way, such as molybdenum, tin, lead, and zinc.

Activities of the Department of State Relating to Stockpiling of Strategic and Critical Materials

The Department of State provides advice and guidance on foreign policy and international economic aspects of stockpile activities and deals with the international relations problems arising out of U.S. Government stockpile activities.

In connection with the development of stockpile objectives, the Department is called on by other Government agencies to assess the availability of strategic commodities in primary producing countries and provide estimates, for strategic planning purposes, of the reliability of these sources of supply in times of national emergency. The Department also reviews proposals for the barter of U.S. surplus agricultural commodities for strategic materials and assists and advises the Department of Agriculture with foreign policy problems arising out of such transactions. Negotiations with foreign countries regarding the sale of surplus stockpile materials as off-set to market-

ing expenditures in certain countries have also been undertaken.

The Department of State shares in development of guidelines for the long-range disposal plans and evaluates the effect of such plans on the economies of friendly foreign countries, and on the foreign policy interests of the United States. In this connection and in accordance with U.S. disposal policy, the Department conducts consultations with affected foreign governments to obtain their views and to minimize the adverse impact of such disposals on U.S. foreign relations. During 1964, the Department conducted a large number of consultations with foreign governments concerning the disposals which were under review. The Department receives and evaluates such adverse foreign reaction to stockpile disposals, as may arise, and advises on new foreign policy considerations which might call for the modulation of a given disposal program.

Activities of the Department of Agriculture Relating to Stockpiling of Strategic and Critical Materials

EXPANSION OF DOMESTIC SOURCES

The Department of Agriculture has continued research work concerned with the development of domestic sources of, or substitutes for, certain strategic and critical agricultural products.

Drug Plant Seeds

Stocks of belladonna, digitalis, and opium poppy seeds continue to be held under optimum storage conditions. No research is under way presently on belladonna and digitalis. During the year, M91 opium poppy seed was grown and sent to storage, and capsule material supplied for morphine determination.

Castorbeans

An improved pistillate castorbean line was released to plant breeders in 1964. This line will eliminate costly roguing operations now practiced in hybrid seed production. Varieties developed with multiple disease resistance will stabilize castorbean yields in Texas and eventually may open new areas for growing castorbeans in the mid-south.

The castorbean gleaner-combine has been modified and is being field tested.

Cordage Fibers

Sansevieria.—The F-1 hybrids (*S. trifasciata-desertii*) have demonstrated satisfactory cold tolerance and regrowth. However, several F-2 seedlings from the *Sansevieria trifasciata* x *Sansevieria desertii* cross appear to possess more desirable agronomic characteristics than the F-1.

In field trials held to evaluate components of the *sansevieria* harvester, performance has been satisfactory and tests will continue.

Producers in Mexico and the International Harvester Company are interested in the *sansevieria* project from the standpoint of a substitute for abaca in cordage manufacture. Abaca has been affected by disease in the Philippines and there is danger of losing this source of raw material.

Present plans are to terminate this research.

Kenaf.—Everglades 41 and Everglades 71 produced greater fiber yields than other kenaf varieties during last season's trials. The late maturing variety, BG 58-10, produced substantially more seed per acre. In screening species for

root knot nematode resistance, an introduction from Kenya was significantly more resistant. This is being crossed with several agronomically desirable lines.

A commercial paper company again planted 15 acres of the kenaf variety Everglades 41 to further evaluate kenaf as a source of pulp in Alabama.

The kenaf harvester was operated during the past season principally to perfect a fiber bundling and tying mechanism. This feature has operated successfully throughout the trials.

Worldwide interest has been shown in the kenaf harvesting and processing equipment developed as a part of the USDA project. It is evident particularly in Guatemala and the Sudan where USDA project personnel were requested by the Agency for International Development to assist in the initiation of mechanization activities.

Present plans are to terminate this research.

BARTER ACTIVITIES

Consistent with the recommendations of the Executive Stockpile Committee approved by the President, emphasis under the barter program continues to be on procurement of goods and services required abroad by other Government agencies. Such barter transactions benefit the U.S. balance of payments by substituting payment in agricultural commodities for dollar expenditures abroad which would otherwise be made by U.S. Government agencies.

No new barter contracts for strategic materials were negotiated during the period covered by this report. Strategic materials valued at about \$18.8 million were delivered during this reporting period, bringing the cumulative total of strategic materials delivered to the Commodity Credit Corporation under barter contracts since 1950 to approximately \$1.5 billion. Of this total, \$223.3 million were transferred to the National Stockpile and about \$1.3 billion to the Supplemental Stockpile through December 31, 1964.

TRANSFERS FROM STOCKPILE FOR DISPOSAL

In 1962, all National Stockpile extra long staple cotton was transferred to CCC—47,518 bales of domestic cotton and 123,000 bales (running) of Egyptian and Sudanese cotton.

The domestic cotton was added to CCC's inventory, resulting in a total of 53,740 bales. Under a CCC sales program, 8,862 additional bales have been sold through December 31, 1964, reducing this inventory to 44,878 bales.

The foreign-grown portion of the cotton is being disposed of through an export sales program. Cumulative sales under the program through December 31, 1964 totaled 81,900 bales, reducing the inventory to approximately 41,100 bales.

Activities of the Department of the Interior Relating to Stockpiling of Strategic and Critical Materials

The Department of the Interior has the responsibility for the management, conservation, and adequate development of the Nation's natural resources to meet the requirements of national security and an expanding national economy. The Department assists the Office of Emergency Planning in formulating and carrying out programs for the stockpiling of critical materials. The Department of the Interior conducts research in exploration, mining, beneficiation, and metallurgy and compiles information on production and consumption for use in stockpile planning. The Department also provides advice and recommendations regarding Purchase Specifications and Special Instructions for stockpiling, storage procedures, and stockpile disposal programs.

The Department is responsible for preparedness programs covering electric power, petroleum and gas, solid fuels and minerals, and conducts resource-requirements studies in order to identify problem areas and develop recommendations and programs for the maintenance of a sufficient mobilization base. The Department also administers programs to encourage the exploration, development, and mining of minerals and metals for emergency purposes.

DISPOSAL PROGRAMS

The Department has been actively participating in the work of the Interdepartmental Disposal Committee and its subcommittee in the development of long-range programs for the disposal of surplus Government stockpile inventories. During the formative stages of each disposal program, consultations are undertaken with representatives of the industries which would be affected by the disposal in order to obtain their views and comments. These views along with analyses of the market situation are the bases for Departmental recommendations.

OTHER ACTIVITIES

Beryllium

The Department of the Interior, through the Bureau of Mines, moved toward conclusion of the extensive study of beryllium potential in domestic mineral resources. Research continued on developing flotation methods, as well as on methods to extract, purify, and fabricate beryllium.

Chromium

Textural and structural features of metallurgical grade chromite ore imported from Russia, which were examined recently by the Geological Survey, are characteristic of ore from lenticular podiform deposits. The size range of known deposits of this kind in the free world suggests that Russian reserves probably are not comparable to the tremendous reserves in extensive layered deposits in the Colony of Southern Rhodesia and the Republic of South Africa.

Copper

An additional clue that may be useful in the search for bonanza copper ore bodies of the type associated with the famed Kennecott mine has been found from geologic mapping by the Geological Survey near Kennecott, Alaska. A zone of altered rock composed largely of jarosite, a mineral commonly indicating hydrothermal alteration, is present in rocks near remnants of some of the Kennecott deposits.

High-Temperature Materials

The Department of the Interior's semiannual evaluation of the technology and supply-demand situation of the elements that should be considered special-property materials for high temperature and other special applications was revised in October 1964.

Lead-Zinc

Recent investigations by the Geological Survey show that anomalous mercury associated with lead-zinc-silver deposits in the Park City district, Utah, migrates to the surface through variable thicknesses of glacial and alluvial cover. This observation indicates that delineation of mercury would be useful in prospecting for ore deposits of the type that are found in the Park City district.

Mercury

Because of the industrial shortage of mercury and resultant release of surplus Government stocks, the Bureau of Mines gave high priority to completion of a detailed and comprehensive report on the mercury mine production potential of the

United States. The report was issued in February 1965.

Silver

Although silver is not a stockpiled material, it has important defense applications. Consequently, the accelerated withdrawal of silver from the large Treasury stock has given silver supply new strategic significance. As a means of evaluating the silver supply outlook, a comprehensive report, entitled Silver Facts and Projections, was prepared jointly by the Bureau of Mines and the Geological Survey. The report discusses the oc-

currence and reserves of silver, evaluates free world supply and demand, and appraises the effect of price on reserves and production. In addition, the Stockpile Basic Data study on silver supply was revised and a mobilization base evaluation for silver was made.

Tungsten

Research was continued by the Bureau of Mines on the properties of tungsten-rhenium alloys. The addition of rhenium produces an alloy that is easily workable at room temperature, as it lowers the ductile-brittle transformation temperature.

Reports Issued by the Department of the Interior Bureau of Mines July-December 1964

Minerals Yearbook 1963, Volumes I and III

Volume I reviews strategic and critical mineral developments on a commodity basis, and Volume III presents details of United States mine production of these minerals by State.

Reports of Investigations

- 6444 Electrodeposition of Molybdenum Metal From Molten Electrolytes.
- 6445 Electrochemical Recovery of Cobalt-Nickel Alloy From Superalloy Scrap.
- 6447 Preparation of Titanium Nitride.
- 6448 Beneficiating Low-Grade Chromites From the Stillwater Complex, Montana.
- 6452 Manganese Extraction Studies Using Ferrous Sulfate and Pickle Liquor.
- 6454 Preparation of Thick Coatings of Tungsten.
- 6457 Solvent Extraction Recovery of Thorium and Yttrium From Siliceous Colorado Ores.
- 6459 Cost Estimates and Optimum Conditions for Continuous-Circuit Leaching of Mercury.
- 6464 Vapor Deposition of Tungsten on MERM Rocket Nozzles.
- 6465 High-Level Gamma-Ray Dosimetry at the Albany Cobalt 60 Facility.
- 6466 Continuous Flotation of Beryl From Spodumene Mill Tailing, Foote Mineral Co., Kings Mountain, N. C.
- 6469 Expanded Investigation of Beryllium Solvent Extraction of Spor Mountain, Utah, Ore.
- 6474 Methods of Analyzing Oilfield Waters: Selenium and Tellurium.
- 6476 Infrared Analysis of Gases Produced During Molten Salt Electrolysis of Metals.
- 6477 Properties of Hydraulic Backfills and Preliminary Vibratory Compaction Tests.
- 6478 Manganese Resources of the Batesville District, Arkansas (in Three Parts).
- 6480 Electrical Resistivity of Cerium Metal in the Temperature Range 4° to 300° K.
- 6481 Smelting Copper Reverberatory Slags To Recover Iron of Low Copper and Sulfur Content.
- 6483 X-Ray Spectrographic Analysis for Trace Quantities of Tantalum in Columbium.
- 6486 Preparation of Copper Powder From Leach Solutions After Precipitation With Iron.
- 6489 Electrefining Beryllium. Operation of a Prototype Cell.
- 6491 Selective Flotation of a Barite-Fluorspar Ore From Tennessee.
- 6492 Columbium-Hafnium Equilibrium Diagram.
- 6495 Heats and Free Energies of Formation of Sulfides of Manganese, Iron, Zinc, and Cadmium.
- 6497 Electric Smelting of Titaniferous Iron Ores From Alaska, Montana, and Wyoming.
- 6498 Intermetallic Phases in Magnesium-Rich Magnesium-Aluminum-Zirconium Alloys.
- 6500 Electrical Conductivity and Density of Molten Systems of Uranium Tetrafluoride and Thorium Fluoride With Alkali Fluorides.
- 6503 The Chromium-Gadolinium System.
- 6504 Solubility Characteristics of Sodium Aluminate.
- 6506 Electrefining of Columbium.
- 6509 Expendable Casting Molds for Reactive Metals.
- 6510 Separation of the Lanthanide Series and Yttrium Using Phosphate and Iminodiacetic Acid Resins.
- 6511 Low Temperature Heat Capacities and Entropies at 298.15° K of Sulfides of Arsenic, Germanium, and Nickel.
- 6512 Electrolytic Extraction of Tungsten From Western Scheelite.
- 6514 Sulfatization of Manganese Minerals and Selected Gangue Materials.
- 6521 The Hafnium-Tantalum Equilibrium Diagram.
- 6522 Polynomial Surface Fitting Using Sample Data From an Underground Copper Deposit.
- 6524 Preparation of Aluminum Fluoride From Alumina Hydrate and Dilute Fluoride Solution.
- 6527 A Process for the Preparation of Thorium by Sodium Reduction of Thorium Tetrachloride.
- 6528 Aluminum Extraction Characteristics of Three Calcium Aluminates in Water, Sodium Hydroxide, and Sodium Carbonate Solutions.
- 6529 Recovery of Tin From Hardhead by Filtration.

Reports of Investigations—Con.

- 6539 Rolled Molybdenum Single Crystals. Deformation Textures, Recrystallization, and Transition Temperature.
- 6541 Investigation of In Situ Rock Stresses, Ruth Mining District, Nevada, With Emphasis on Slope Design Problems in Open-Pit Mines.
- 6547 Recrystallization of Vanadium.
- 6549 Metallic Binders for Zirconium Diboride: Chromium, Molybdenum, and Tungsten.
- 6553 Some Effects of Yttrium and Rare-Earth-Metal Additions on Electro-refined Vanadium.
- 6554 Recovery of Lead and Sulfur by Combined Chlorination and Electrolysis of Galena.
- 6558 Development of Columbium and Tantalum Alloys for Elevated-Temperature Service.
- 6562 A Proposed Modified Percolation-Rate Test for Use in Physical Property Testing of Mine Backfill.
- 6566 Nickel-Gadolinium Phase Diagram.
- 6567 Reactions Between Manganous Oxide, Graphite, and Manganese Carbide.
- 6569 Beneficiation and Hydrometallurgical Treatment of Complex Mercury Sulfide Products.
- 6570 Electrorefining Beryllium. Two-Cycle Electrolysis.

Information Circulars

- 8206 Marketing Ores and Concentrates of Gold, Silver, Copper, Lead and Zinc in the United States.
- 8223 Titanium in the Southeastern United States.

Reports Dealing With Stockpile Material Issued by U.S. Geological Survey

July-December 1964

Maps

- I-412 Geologic map and sections of the Deep Creek area, Stevens and Pend Oreille Counties, Washington, by Robert G. Yates (lead, zinc).
- I-430 Geologic map of the Rodman Mountains quadrangle, San Bernardino County, California, by T. W. Dibblee, Jr. (copper).

Professional Papers

- 415 Geology and mineral deposits of the Thomas and Dugway Ranges, Juab and Tooele Counties, Utah, by M. H. Staatz and W. J. Carr (fluorspar, cooper, lead, zinc).
- 416 Geology and ore deposits of the Dragoon quadrangle, Cochise County, Arizona, by John R. Cooper and Leon T. Silver (copper, zinc, tungsten).
- 445 Ore deposits of the Coeur d'Alene district, Shoshone County, Idaho, by V. C. Fryklund, Jr., with a section on The bleached rock in the Coeur d'Alene district, by P. L. Weiss (zinc, lead, copper).
- 453 Geology of the Abajo Mountains area, San Juan County, Utah, by I. J. Witkind (vanadium).
- 454-J Geology of Bullfrog quadrangle and ore deposits related to Bullfrog Hills caldera, Nye County, Nevada, and Inyo County, California, by H. R. Cornwall and F. J. Kleinhampl (fluorspar, mercury).
- 458-B Rocks, structure, and geologic history of Steamboat Springs thermal area, Washoe County, Nevada, by Donald E. White, G. A. Thompson, and C. H. Sandberg (mercury, antimony).
- 461 Geology of the Klondyke quadrangle, Graham and Pinal Counties, Arizona, by Frank S. Simons (lead, zinc, copper, molybdenum).
- 469 Cambrian rocks of the Pioche mining district, Nevada, by C. W. Merriam with a section on Pioche shale faunules, by A. R. Palmer (zinc, lead).
- 501-A,B,C Geological Survey Research 1964. Short papers in geology and hydrology. Scientific notes and summaries of investigations.

Bulletins

- 1108-E Geology of the Sumdum copper-zinc prospect, southeastern Alaska, by E. M. Mackevett, Jr., and M. S. Blake, Jr.
- 1123-G Geology of the Belmont and Calamine quadrangles, Wisconsin, by Harry Klemic and W. S. West (zinc, lead).
- 1123-H Geology of the Cuba City, New Diggings, and Shullsburg quadrangles, Wisconsin and Illinois, by Thomas B. Mullens (zinc, lead).
- 1135-C Oxidized zinc deposits of the United States, Part 3, Colorado, by A. V. Heyl.
- 1144-F Distribution of thorium and uranium in three early Paleozoic plutonic series of New Hampshire, by J. B. Lyons.
- 1161-E Geology of the Christmas quadrangle, Gila and Pinal Counties, Arizona, by Ronald Willden (copper).
- 1199-A Geology of the southeastern bauxite deposits, by Elizabeth F. Overstreet.
- 1204 Geologic distribution and resources of thorium, by J. C. Olson and W. C. Overstreet.

Circular

- 496 Mercury—its occurrence and economic trends, by E. H. Bailey and R. M. Smith.

STATUS OF OBLIGATIONAL OPERATIONS
Under PL 117 and PL 524 for The National Stockpile
As of December 31, 1964

ACTIVITY	APPROPRIATED FUNDS ^{a/}	AUTHORIZATIONS FOR		TOTAL OBLIGATIONAL AUTHORITY (CUMULATIVE) ^{d/}
		MAKING ADVANCE CONTRACTS ^{b/}	LIQUIDATING OUTSTANDING ADVANCE CONTRACTS ^{c/}	
<u>Under PL 117 - 79th Congress</u>				
PL 791 - 79th Congress, August 7, 1946	\$ 10,000,000	\$	\$	\$ 10,000,000
PL 792 - 79th Congress, March 25, 1946	12,500,000			22,500,000
PL 793 - 79th Congress, June 26, 1946	<u>47,500,000</u>			<u>70,000,000 ^{e/}</u>
<u>Under PL 524 - 80th Congress</u>				
PL 801 - 80th Congress, August 2, 1948	100,000,000	-	-	100,000,000
PL 802 - 80th Congress, July 13, 1948	100,000,000	75,000,000	-	275,000,000
PL 803 - 80th Congress, June 15, 1948	225,000,000	300,000,000	-	800,000,000
PL 804 - 80th Congress, June 23, 1948	75,000,000	-	75,000,000	800,000,000
PL 805 - 80th Congress, June 23, 1948	40,000,000	270,000,000	-	1,110,000,000
PL 806 - 80th Congress, June 26, 1948	275,000,000	250,000,000	-	1,635,000,000
PL 807 - 80th Congress, June 26, 1948	250,000,000	-	250,000,000	1,635,000,000
PL 808 - 80th Congress, October 20, 1948	-	-	100,000,000 ^{f/}	1,535,000,000
PL 809 - 80th Congress, September 4, 1948	365,000,000	-	240,000,000	1,660,000,000
PL 810 - 80th Congress, September 4, 1948	240,000,000	125,000,000	-	2,025,000,000
PL 811 - 80th Congress, September 27, 1948	573,232,449 ^{g/}	-	-	2,598,232,449
PL 812 - 80th Congress, January 4, 1951	1,334,911,000	-	-	4,433,143,449
PL 813 - 80th Congress, November 1, 1951	593,216,500	-	-	5,023,359,949
PL 814 - 80th Congress, November 1, 1951	200,000,000	-	-	5,023,359,949
PL 815 - 81st Congress, July 25, 1952	200,979,000	-	200,000,000	5,157,338,949
PL 816 - 81st Congress, July 31, 1953	-	-	70,000,000	5,127,338,949
PL 817 - 81st Congress, June 26, 1953	-	-	30,000,000	5,099,738,949
PL 818 - 81st Congress, August 26, 1953	379,952,000 ^{h/}	-	27,600,000	5,479,690,949
PL 819 - 81st Congress, June 22, 1953	371,721,000 ^{i/}	-	-	5,801,411,949
PL 820 - 81st Congress, June 16, 1953	27,400,000	-	-	5,801,411,949
PL 821 - 81st Congress, August 28, 1953	3,000,000	-	27,400,000	5,804,411,949
Repealed by PL 822 - 81st Congress, September 14, 1953	-58,370,923 ^{j/}	-	-	5,746,041,026
PL 823 - 81st Congress, July 12, 1949	22,237,000 ^{k/}	-	-	5,768,278,026
PL 824 - 81st Congress, August 17, 1951	16,662,510 ^{l/}	-	-	5,784,960,536
PL 825 - 81st Congress, November 3, 1952	8,729,887 ^{m/}	-	-	5,793,690,423
PL 826 - 81st Congress, December 15, 1953	23,925,000	-	-	5,817,615,423 ^{n/}
PL 827 - 81st Congress, August 30, 1954	<u>9,318,395 ^{o/}</u>	-	-	<u>5,826,933,818</u>
Total PL 117 and 524	<u>\$5,826,933,818</u>	<u>\$1,020,000,000</u>	<u>\$1,020,000,000</u>	<u>\$5,826,933,818</u>

SOURCE: GENERAL SERVICES ADMINISTRATION

- ^{a/} Congressional appropriations of funds for stockpiling purposes.
^{b/} Congressional appropriations of contracting authority for stockpiling purposes in advance of appropriation of funds.
^{c/} Congressional authorization to liquidate outstanding obligations incurred under previously granted advance contract authority.
^{d/} Cumulative total of appropriated funds and advance contract authorization, less authorization to liquidate outstanding advance contract.
^{e/} Excludes \$9,845,780 received from sale of stockpile materials for wartime consumption. Receipts were returned to Treasury, February 1948.
^{f/} Cancellation of previously authorized authority to make contracts.
^{g/} Excludes \$23,404,621 transferred to operating expenses for rehabilitation of Government-owned material producing plants.
^{h/} Excludes \$18,600 transferred to Transportation and Public Utilities Service, GSA.
^{i/} Excludes \$400,000 transferred to other GSA Funds for classified and wage board salary increases during 1951.
^{j/} As of June 30, 1955 this amount included cash of \$32,350,791 and receivables of \$6,020,131.
^{k/} Excludes \$7,753,000 transferred to other GSA Funds for classified and wage board salary increases during 1951.
^{l/} Appropriation of \$40,000,000 of which \$22,750 transferred to Office of Administrator, GSA and \$17,250,000 transferred to General Fund Receipts.
^{m/} Appropriation of \$18,000,000 less transfers to General Fund Receipts of \$9,265,113.
^{n/} Excludes receipts from rotational sales.
^{o/} Appropriation of \$17,755,000 less returns to Treasury of \$8,436,605.

TOTAL OBLIGATIONS AND EXPENDITURES OF STOCKPILING FUNDS

Under PL 117 and PL 520 for THE NATIONAL STOCKPILE

CUMULATIVE AND BY FISCAL PERIOD THROUGH DECEMBER 31, 1964

Fiscal Period	OBLIGATIONS INCURRED <u>A/</u>		EXPENDITURES <u>B/</u>	
	Net Change By Fiscal Period	Cumulative As of End of Period	By Fiscal Period	Cumulative As of End of Period
Prior to Fiscal Year 1948	\$ 123,871,685	\$ 123,871,685	\$ 66,330,731	\$ 66,330,731
Fiscal Year 1948	252,901,411	376,773,096	82,907,375	149,238,306
Fiscal Year 1949	459,766,881	836,539,977	304,486,177	453,724,483
Fiscal Year 1950	680,427,821	1,516,967,798	440,834,970	894,559,453
Fiscal Year 1951	2,075,317,099	3,592,284,897	655,537,199	1,550,096,652
Fiscal Year 1952	948,117,547	4,540,402,444	844,683,459	2,394,780,111
Fiscal Year 1953	252,375,163	4,792,777,607	906,158,850	3,300,938,961
Fiscal Year 1954	116,586,681	4,909,364,288	644,760,321	3,945,699,282
Fiscal Year 1955	321,799,833	5,231,164,121	801,310,094	4,747,009,376
Fiscal Year 1956 <u>C/</u>	251,692,667	5,482,856,788	382,011,786 <u>C/</u>	5,129,021,162 <u>C/</u>
Fiscal Year 1957	190,000,109	5,672,856,897	354,576,558	5,483,597,720
Fiscal Year 1958	54,473,250	5,727,330,147	173,753,997	5,657,351,717
Fiscal Year 1959	38,710,879	5,766,041,026	65,260,098	5,722,611,815
Fiscal Year 1960	19,859,290	5,785,900,316	49,227,142	5,771,838,957
Fiscal Year 1961	29,082,919	5,814,983,235	33,325,431	5,805,164,388
Fiscal Year 1962	31,179,407	5,846,162,642	33,695,431	5,838,859,819
Fiscal Year 1963	17,414,900	5,863,577,542	22,104,176	5,860,963,995
Fiscal Year 1964	15,489,597	5,879,067,139	16,091,067	5,877,055,062
Fiscal Year 1965 - First Half	7,354,770	5,886,421,909	8,002,253	5,885,057,315

A/ Figures are the sum of obligations incurred under PL 520, 79th Congress and PL 117, 76th Congress. Final obligations under PL 117, 76th Congress were incurred in Fiscal Year 1949.

B/ Figures are the sum of expenditures under PL 520, 79th Congress and PL 117, 76th Congress. Final expenditures under PL 117, 76th Congress were made in Fiscal year 1951.

C/ 1956 and subsequent fiscal periods and cumulative expenditures are reported on an accrual basis.

SOURCE: GENERAL SERVICES ADMINISTRATION

EXPENDITURES OF STOCKPILE FUNDS, BY TYPE
(for the National Stockpile)

Cumulative and for First Half Fiscal Year 1965

Type of Expenditure	Cumulative Through June 30, 1964	Six Months Ended December 31, 1964	Cumulative Through December 31, 1964
Expenditures			
Gross Total		\$8,142,525	\$6,428,067,612
Less: Adjustment for Receipts from Rotation Sales and Reimbursements	\$ 6,419,925,087	140,272	543,010,297
Net Total	542,870,025	8,002,253	5,885,057,315
Material Acquisition Costs, Total	5,877,055,062	33,420	5,436,931,611
Stockpile Maintenance Costs, Total	5,436,898,191	6,155,087	387,248,742
Facility Construction Storage and Handling Costs	381,093,655	-	43,772,457
Net Rotation Costs	43,772,457	6,155,283	240,723,537
Administrative Costs	234,568,254	-196	102,752,748
Operations, Machine Tool Program	102,752,944	1,305,763	52,756,492
	51,450,729	507,983	8,120,470
	7,612,487		

Cumulative figures are the total of expenditures under PL 117, 76th Congress and PL 520, 79th Congress. Expenditures under PL 117 totaled \$70,000,000 of which \$55,625,237 was for materials acquisition costs and \$14,374,763 was for other costs. Final expenditures under PL 117 were made in FY 1951.

SOURCE: GENERAL SERVICES ADMINISTRATION

